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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/716,543
Filing Date: November 20, 2003
Appellant(s): BABIC ET AL.

MAILED

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GROUP 2800

John F. Hayden
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed November 21, 2006 appealing from the
Office action mailed April 19, 2005.

(1) Real Party in Interest

Cooper Technologies Company.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

GROUND OF REJECTION NOT ON REVIEW

The following grounds of rejection have not been withdrawn by the examiner, but they are not under review on appeal because they have not been presented for review in the appellant's brief. Claims 7, 16, 17, and 31-33 are rejected as obvious over Healey (US Patent 3,979,709).

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

No evidence is relied upon by the examiner in the rejection of the claims under appeal.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4, 6-11, 14, 16, 17, 22-25, 27-29, 31-33 and 37-39 are rejected under 35 U.S.C. 102(b) as being anticipated by Healey, Jr. (PN 3,979,709). With respect to claim 1, Healey teaches a fuse comprising: an electrical assembly comprising two electrical contacts (7) accessible from an exterior of a fuse and a fuse element (1) in contact with the two electrical contacts; and a fuse tube assembly comprising a pre-formed tubular support structure (6a and 6b) surrounding at least a portion of the electrical assembly (see Fig. 1) and a reinforcing structure (6c) formed over the support structure and in contact with at least a portion of the electrical assembly, wherein the reinforcing structure comprises a fiber matrix pre-impregnated with a resin (Fig. 1 labels 6c as a resin impregnated glass cloth).

3. With respect to claims 2-4, Healey teaches a current limiting fuse wherein the fuse element (1) and the fuse tube assembly (6) extends between the contacts (see Fig. 1)

4. With respect to claims 6 and 7, Healey teaches that the fiber matrix comprises a pre-woven fabric (6c, column 6 lines 25-26) of fibers oriented in a predetermined orientation (see Fig. 7).
5. With respect to claim 9, Healey teaches a pre-formed tubular structure comprises of a composite material (6b Fig. 7).
6. With respect to claim 10, Healey teaches a slit extending from a first end of the structure to a second end (b see Fig. 7, 9-12).
7. With respect to claim 11, Healey teaches that the thickness of the support structure (6a and 6b) is greater than the thickness of the reinforcing structure (6c, see Fig. 10).
8. With respect to claims 16 and 17, Healey teaches the matrix as applied in Fig. 15 is applied circumferentially with a predetermined angle and orientation (col 11, 41-43).
9. With respect to claim 22-24, Healey teaches wherein the reinforcing structure (6c) is configured to reinforce a selected portion of an area of the fuse along a lengthwise axis of the fuse that comprises less than all of the area (see Fig. 1, 6c does not extend past the end cap 7), and where the selected portion excludes a portion of the outside surface of the electrical assembly (see Fig. 1, 6c is covered by 7 on the end).
10. With respect to claim 25, the method of reinforcing a fuse is inherent in the structure of Healey. Healey teaches a method of reinforcing a fuse comprising: electrical assembly comprising two electrical contacts (7) accessible from an exterior of a fuse and a fuse element (1) in contact with the two electrical contacts (see Fig.1); surrounding at least a portion of the electrical assembly by a pre-formed tubular support

structure (6a and 6b); and applying a reinforcing structure (6c) over the support structure and in contact with at least a portion of the electrical assembly (see Fig. 1), wherein the reinforcing structure comprises a fiber matrix, the fiber matrix comprising fibers pre-impregnated with a resin (Fig. 1 labels 6c as a resin impregnated glass cloth).

11. With respect to claim 27-29, Healey teaches that the matrix is applied in a rolling operation, a wrapping operation, or is circumferentially applied (see Fig. 15 and columns 11-13).

12. With respect to claims 31-33, Healey teaches curing the fuse via heating (column 12 lines 18-22).

13. With respect to claim 37, Healey teaches filling the fuse with an electrical arc-quenching medium (5, column 5 lines 66-8).

14. With respect to claim 38 and 39, Healey teaches a current limiting fuse comprising: an electrical assembly comprising two electrical contacts (7) accessible from an exterior of the fuse and a fuse element (1) in contact with the two electrical contacts (see Fig. 1); and a fuse tube assembly comprising a pre-formed tubular support structure (6b) surrounding at least a portion of the electrical assembly and a reinforcing structure (6a and 6c) formed over the support structure (see Fig. 1); wherein the reinforcing structure comprises a resin composition of discontinuous fibers arbitrarily dispersed in an epoxy (6a, column 6 lines 56-59).

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Healey, Jr. (3,979,709) in view of Tobin (PN 4,349,803). Healey teaches the device as applied to claim 1 above. Healey lacks a pre-formed tubular support structure overlapping the electrical contacts. Tobin teaches a fuse support structure (10) where an inside surface overlaps a portion of an outside surface of each of the electrical contacts (14, see Fig. 1). It would have been obvious to a person of ordinary skill in the art to apply the technique of attaching electrical contacts to a fuse body taught by Tobin to the fuse structure of Healey to obtain a reinforced fuse with integral contacts for greater strength.

17. Claims 12, 13, 26 rejected under 35 U.S.C. 103(a) as being unpatentable over Healey, Jr. (3,979,709) in view of Schmunk et al. (PN 4,028,656). Healey teaches the device as applied to claim 1 and 25 above. Healey lacks a heat shrink structure providing UV protection formed over the reinforcing structure. Schmunk teaches a heat shrink structure (24, column 3 lines 43-47) providing UV protection (column 3 lines 31-32) formed over a fuse tube assembly. It would have been obvious to a person of ordinary skill in the art to combine the heat shrink cover of Schmunk with the reinforced fuse structure of Healey to obtain a fuse better protected from shock and external elements.

18. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Healey, Jr. (3,979,709) in view of Schmunk et al. (PN 4,028,656) as applied to claim 12 above, and in further view of Pearce (PN 5,261,980). Healey as modified by Schmunk above

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lacks a heat shrink structure comprising of one or more strips of heat shrink tape.

Pearce teaches wrapping a tube of fiber composite with heat shrink tape (column 4 lines 37-38). It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the tape wrapping technique of Pearce with the heat shrink fuse structure of Healey as modified by Schmunk to obtain a heat shrink structure that can be applied to a variety of fuse sizes using a single heat shrink product.

19. Claims 7, 16-21, 30, and 31-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Healey, Jr. (3,979,709). With respect to claims 7, 16-21, 30, 31-36, Healey teaches the device as applied to claims 1, 6, and 25 above. Even though the claims are limited by and defined by the recited process, the determination of patentability of the product is based on the product itself, and does not depend on it's method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985).

20. With respect to claims 7, 16-21, and 30, it would have been obvious to one of ordinary skill in the art to use a woven fabric (that inherently much have it's fibers in a predetermined orientation), and/or applying said fibers circumferentially or vertically as an alternate equivalent means of applying the matrix to the fuse of Healey. Such a process would yield the same end result.

With respect to claims 34-36, the method of post application curing of the fuse and the specific temperature used for curing and pre-heating would have been obvious one of

ordinary skill in the art based upon known ranges of operation for curing the matrix of Healey that would yield the same end result.

(10) Response to Argument

With respect to the arguments that Healely does not anticipate the pre-formed structure claimed; the Examiner respectfully disagrees. The Applicant fails to give the claims their broadest reasonable interpretation. In his arguments, the Applicant states on page 4 of the Appeal Brief that, "claims 1 and 38 require that a reinforcing structure is formed over a separate preformed tubular support structure." (emphasis in original) Also, on page 5 the Applicant states, "claims 1 and 38 recites that the reinforcing structure is formed over the pre-formed tubular support structure, such that the pre-formed tubular support structure must be formed *before* the reinforcing structure is formed...". (emphasis added) It is noted that the claims do not support for either statement. Claims 1 and 38 state "...a pre-formed tubular support structure surrounding at least a portion of the electrical assembly and a reinforcing structure formed over the pre-formed tubular support structure...". The claims refer to the positional interrelationships between components of a fuse. There is no indication in the claims as to the order in which the components are manufactured.

The Applicant does not give the term "pre-formed" it's plain meaning. As stated in the Advisory Action filed August 2, 2005 and quoted by the Applicant on page 5 of the Appeal Brief the plain meaning of pre-formed is: "formed preceding some other event". The Applicant alleges that this other event must be the forming of the reinforcing structure claimed. However there is no support for this statement in the claims. In

order to reach this conclusion it would appear that the Applicant is using a definition of "pre-formed" not known to a worker of the fuse art and not contained in the original disclosure.

The Applicant relies on In re Garner, 162 USPQ 221 (CCPA 1969) to allegedly overcome In re Thorpe, 227 USPQ 964 (Fed. Cir. 1995) cited in the rejection. It is believed that both of these rulings support the rejection at issue. The rejection takes into account that, in a product-by process claim, in order for the process to be given patentable weight it must affect the final product. The claims are not dismissed merely because they contain a process limitation, as was the case in Garner. The process implied in claims 1 and 38 was considered and found to hold no effect over the structure of the final product as claimed.

Even if the process implied by the word "pre-formed" were given patentable weight, it would not overcome the rejection over Healey. The claims do not give any indication to an implied order of forming other than the prefix "pre-". Since the claims are silent as to the event that is to be preceded, any event could be used as the reference point. The implied process limitation is so broad that if it was given weight the device taught by Healey would still fall within the scope of the claims.

Claim 25 claims a method of reinforcing a fuse. The method steps recited are inherent in view of the structure of Healey. Claim 25 is directed toward "providing" identical structural components to the ones found in apparatus claim 1 in an identical relationship. Healey anticipates claim 25 in the same manner as apparatus claim 1.

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The remaining arguments directed to the dependant claims are moot in view of the arguments above directed to the independent claims above.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

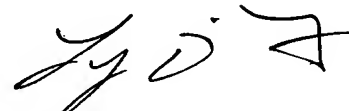
CMB March 2, 2006

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